

Notice of Allowability

Application No.

09/915,628

Examiner

Kenneth Tang

Applicant(s)

WILLMAN, BRYAN M.

Art Unit

2195

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 12/27/05.
2. ☒ The allowed claim(s) is/are 1-22,28-30,32-35,37-43,48-66,68 and 78-98.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
 - * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 3/10/06
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


MEGAN L. ALLEN
SUPERVISORY PATENT EXAMINER
TECHNICAL

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

2. Authorization for this examiner's amendment was given in a telephone interview with Albert S. Michalik (Reg. No. 37,395) on 3/10/06.

3. The application has been amended as follows:

- **Replace claims 1, 16, and 18 as follows:**

1. In a computer-system, a method comprising:
 - receiving a request via a process thread having a first memory map associated therewith;
 - changing a privilege level to a level that allows a memory map change;
 - performing the memory map change to associate a second memory map with the process thread, the second memory map providing different memory access with respect to the first memory map;
 - restoring the privilege level to a level that does not allow a memory map change; and
 - wherein the first and second memory maps each include a mapping that maps a virtual memory address to a physical memory address that is larger than the largest possible virtual memory address that an entity is allowed to address, wherein the first and second memory maps

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each include a mapping that maps a virtual memory address to a physical memory address that is the same, wherein the virtual memory address that maps to a physical memory address that is larger is in user mode addressable space, and wherein the physical memory address that is the same is in kernel mode addressable space.

16. The method of claim 14 wherein the object comprises a synchronization object.

18. The method of claim 14 wherein the object comprises a thread.

- **Cancel claims 23-27 and 31.**
- **Replace claim 32 as follows:**

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32. In a computing device, a system comprising:

- a process having at least one thread;
- a first memory map associated with the at least one thread and having data therein that maps virtual memory addresses to physical memory;
- a second memory map having data therein that maps virtual memory addresses to physical memory, the second memory map providing different memory access with respect to the first memory map;
- a protection mechanism, the protection mechanism configured to allow changing of a map; and
- trusted code, the trusted code configured to invoke the protection mechanism to change the at least one thread from being associated with the first map to being associated with the second map, and wherein the trusted code further includes a function that performs at least one trust-privileged operation from among a set of trust-privileged operations, the set including: signaling a synchronization object, deleting a timer, and closing a handle.

- **Cancel claim 36.**

- **Replace claims 37-39, 41, and 43 as follows:**

37. The system of claim 32 wherein the function allocates memory to the process.

38. The system of claim 32 wherein the function deallocates memory.

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- 39. The system of claim 32 wherein the function allocates an object.
- 41. The system of claim 39 wherein the object comprises a synchronization object.
- 43. The system of claim 39 wherein the object comprises a thread.
- **Cancel claims 44-47.**
- **Replace claim 64 as follows:**

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64. A computer-implemented method, comprising:

associating first, second and third address maps with a process, wherein at least the second address map includes a mapping that maps a virtual address to a physical address that is larger than the largest possible virtual memory address and the third map includes a mapping that maps a virtual address to a physical address that is larger than the largest physical address mapped to by the second map;

receiving a request from a thread of the process to change from the first address map to the second address map;

changing the first address map to the second address map; ~~and~~

using the mapping to access data at a physical memory location having a physical address that is larger than the largest possible virtual memory address; and

switching to the third map to access data at the physical address that is larger than the largest physical address mapped to by the second map.

- **Cancel claims 67 and 69-77.**

- **Add the following new claims 78-98:**

78. In a computer-system, a method comprising:

receiving a request via a process thread having a first memory map associated therewith;

changing a privilege level to a level that allows a memory map change;

performing the memory map change to associate a second memory map with the process thread, the second memory map providing different memory access with respect to the first memory map and accessing protected memory;

restoring the privilege level to a level that does not allow a memory map change;

executing trusted code while the second memory map is associated with the process thread, including entering at a predefined entry point a function that performs at least one trust-privileged operation from among a set of trust-privileged operations, the set including: signaling a synchronization object, deleting a timer, and closing a handle.

79. The method of claim 78 wherein receiving a request comprises receiving an application programming interface call at an operating system component.

80. The method of claim 78 wherein receiving a request comprises, receiving at an operating system a call from a kernel mode component.

81. The method of claim 80 wherein the kernel mode component comprises an installable driver.

82. The method of claim 78 wherein changing a privilege level comprises calling a call gate.

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83. The method of claim 78 wherein changing a privilege level comprises changing to a ring 0 privilege level.

84. The method of claim 78 wherein performing the map change comprises writing to a register.

85. The method of claim 78 further comprising, performing a second map change to re-associate the first map with the process thread.

86. The method of claim 78 wherein entering the function comprises making an application programming interface call.

87. The method of claim 78 wherein the function allocates memory.

88. The method of claim 78 wherein the function deallocates memory.

89. The method of claim 78 wherein the function allocates an object.

90. The method of claim 89 wherein the object comprises an item of a set, the set comprising a handle, a synchronization object, a process and a thread.

91. The method of claim 78 wherein the first and second memory maps each include a mapping that maps a virtual memory address to a physical memory address that is larger than the largest possible virtual memory address that an entity is allowed to address.

92. The method of claim 91 wherein the virtual memory address that maps to a physical memory address that is larger is in user mode addressable space.

93. The method of claim 91 wherein the first and second memory maps each include a mapping that maps a virtual memory address to a physical memory address that is the same.

94. The method of claim 93 wherein the physical memory address that is the same is in kernel mode addressable space.

95. The method of claim 91 wherein the first and second memory maps each include a mapping that maps a virtual memory address to a physical memory address that is the same, wherein the virtual memory address that maps to a physical memory address that is larger is in user mode addressable space, and wherein the physical memory address that is the same is in kernel mode addressable space.

96. The method of claim 78 wherein the first and second memory maps each map a virtual memory address to a physical memory address that is common to both maps.

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97. The method of claim 78 wherein the second map maps to memory that is invalid in the first map.

98. The method of claim 78 wherein the second map maps to memory that has different access rights in the first map.

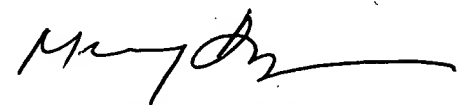
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth Tang whose telephone number is (571) 272-3772. The examiner can normally be reached on 8:30AM - 6:00PM, Every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kt
3/10/06


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